

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.

PCTWORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

②

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ :

C12P 19/34

A1

(11) International Publication Number:

WO 00/55350

(43) International Publication Date: 21 September 2000 (21.09.00)

(21) International Application Number: PCT/US00/05882

(22) International Filing Date: 8 March 2000 (08.03.00)

(30) Priority Data:
60/124,270 12 March 1999 (12.03.99) US(71) Applicant (for all designated States except US): HUMAN
GENOME SCIENCES, INC. [US/US]; 9410 Key West
Avenue, Rockville, MD 20850 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): ROSEN, Craig, A.
[US/US]; 22400 Rolling Hill Road, Laytonsville, MD
20882 (US). RUBEN, Steven, M. [US/US]; 18528 Heritage
Hills Drive, Laytonsville, MD 20882 (US).(74) Agents: WALES, Michele, M. et al.; Human Genome Sciences,
Inc., 9410 Key West Avenue, Rockville, MD 20850 (US).(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR,
BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE,
GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR,
KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN,
MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK,
SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW,
ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ,
UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD,
RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK,
ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI
patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR,
NE, SN, TD, TG).

Published

*With international search report.
Before the expiration of the time limit for amending the
claims and to be republished in the event of the receipt of
amendments.*

(54) Title: HUMAN CANCER ASSOCIATED GENE SEQUENCES AND POLYPEPTIDES

(57) Abstract

This invention relates to newly identified tissue specific cancer associated polynucleotides and the polypeptides encoded by these polynucleotides herein collectively known as "cancer antigens", and to the complete gene sequences associated therewith and to the expression products thereof, as well as the use of such tissue specific cancer antigens for detection, prevention and treatment of tissue specific disorders, particularly the presence of cancer. This invention relates to the cancer antigens as well as vectors, host cells, antibodies directed to cancer antigens and recombinant and synthetic methods for producing the same. Also provided are diagnostic methods for diagnosing and treating, preventing and/or prognosing tissue specific disorders, including cancer, and therapeutic methods for treating such disorders. The invention further relates to screening methods for identifying agonists and antagonists of cancer antigens of the invention. The present invention further relates to methods and/or compositions for inhibiting the production and/or function of the polypeptides of the present invention.

aattttgcaa acacgaggct gcagtcagtt cggaaggct gtaggacccg cagccagtgc 300
aggcactctg gacctctcag ggtggcgatg aagtttccag cgcggagtac caggggagca 360
accaacaaaa aagcagagtc ccgccagccc tcagagaatt ctgtgactga ttccaactcc 420
gattcagaag atgaaagtgg aatgaatttt ttggagaaaa gggctttana tataaagcaa 480
aacaaagcaa tgcttgcaaa actcatgtct gaattagaaa gcttccttg ctcgttccgt 540
ggaagacatc cctcccagg ctcogactca caatcaagga gaccgcgaag gcgtacatte 600
ccgggtgttg cttccaggag aaaccctgaa cggagagctc gtcctcttac caggtcaagg 660
tcccggatcc tcgggtccct tgacgctcta cccatggagg aggaggagga agaggataag 720
tacaatgttg tgagaaagag gaagaccgtg gatggctaca tgaatgaaga tgacctgccc 780
agaagccgtc gctccagatc atccgtgacc ctccgcata taattcgccc agtggagaa 840
attacagag aggagtggga gaacgtctgc agcaattctc gagagaagat atataaccgt 900
tcactgggtc ctacttgta tcaatgccgt cagaagacta ttgataccaa aacaaactgc 960
agaaacccag actgctgggg cgttcgaggc cagttctgtg gccctgcct tcgaaaccgt 1020
tatggtgaag aggtcaggga tgctctgtg gatccgaact ggcattgccc gccttgctga 1080
ggaatctgca actgcagttt ctgccggcag cgagatggac ggtgtgcgac tggggctcct 1140
gtgtatntag ccaaatatca tggctttggg aatgtgcatg cctacttgaa aagcctgaaa 1200
caggaatttg aaatgcaagc ataatatctg gaaaatttgc tgcctgcctt ctacttctca 1260
aatctttott gtaaaagttt ccaatttttt cactgaaacc tgagttaaaa atottgatga 1320
tcagcctgtt tcataagaaa ctccaatcaa gttaatttta gcagacatgt gtttctggag 1380
catcacagaa ggtatattgc tagttacact ttgccctcct gcagtttctt ctctgctccc 1440
aacccccac tcatagcatc cccctctatt tccaatgctc ctctccaacc gcttagtttc 1500
tgaatttctt ttaaattaca gttttatgaa agcatatttt attacttggt tgttgaaata 1560
gcctyataa aacctaaagca cttggaaacn caataatagt attaaactaac tagatctatt 1620
gaatttcaga gaagagccta aatagcaaan tttacacaaa aacgagtatg atttagcact 1680
catactagtt gaggggtttg ngccgatagc gactgctaata gaac 1724

<210> 324

<211> 2261

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1098)

<223> n equals a,t,g, or c

<400> 324

cccagatggt agggccaacag gggacgcttt tgcctcttt gcctgtgagg aatatgcaca 60
gaatgcgttg aggaagcata aagacttggt gggtaaaaga tacattgaac tcttcaggag 120
cacagcagct gaagttcagc aggtgctgaa tcgattctcc tcggccctc tcattccact 180
tccaacccct cccattattc cagtactacc tcagcaattt gtgcccccta caaatgtag 240
agactgtata cgccttcgag gtcttcccta tgcagccaca attgaggaca tcctggattt 300
cctgggggag ttcgccacag atattcgtac tcatggggtt cacatgggtt tgaatcacca 360
ggggccgccca tcaggagatg cctttatcca gatgaagtct ggggacagag catttatggt 420
tgcacagaag tgcataaaaa aaaacatgaa ggacagatat gttgaagtct ttcagtgttc 480
agctgaggag atgaactttg tgttaatggg gggcacttta aatcgaaatg gcttatcccc 540
accgccatgc ctgtctctc cctcctacac atttccagct cctgctgcar ttattcctac 600
araarctgcc atttaccagc cctctgtgat tttgaatcca cgagcactgc agccctycac 660
agcgtactac ccagcaggca ctcagctctt catgaactac acagcgtact atcccagtgt 720
ttgaaagatg tatggtgatc ttgaaacctc cagacacaag aaaacttcta gcaaattcag 780
gggaagtttg tctacactca ggctgcagta ttttcagcaa acttgattgg acaaacgggc 840

```

ctgtgcctta tcttttggtg gagtgaaaaa atttgagcta gtgaagccaa atcgtaactt 900
acagcaagca gcatgcagca tacctggctc tttgctgatt gcaaataaggc atttaaaatg 960
tgaatttga atcagatgct tccattactt ccagttaaag tggcatcata ggtgtttcct 1020
aagttttaag tcttggataa aaactccacc agtgtctacc atctccacca tgaactctgt 1080
taaggaagct tcattttngt atattcccgc tcttttctct tcatttccct gtcttctgca 1140
taatcatgcc ttcttgctaa gtaattcaag cataagatct tggaataata aaatcacaaat 1200
cttaggagaa agaataaaat tgttattttc ccagtcctct ggccatgatg atatcttatg 1260
attaaaaaca aattaaattt taaaacacct gaagatawat tagaagaaat tgtgcaccct 1320
ccacaaaaa tacaagttt aaaagtgtg atcttttct cagcaggtat cagttgtaa 1380
taatgaatta ggggccaaaa tgcaaacga aaaatgaagc agctacatgt agttagtaat 1440
ttctagtttg aactgtaatt gaattttgtg gcttcatatg tattatttta tattgtactt 1500
ttttcattat tgatggtttg gactttaata agagaaattc catagttttt aatatcccag 1560
aagtgcagca atttgaacag tgtattctag aaaacaatac actaactgaa cagaagtga 1620
tgcttatata tattatgata gccttaaacc tttttcctct aatgccttaa ctgtcaata 1680
attataacct tttaaagcat aggactatag tcagcatgct agactgagag gtaaacactg 1740
atgcaattag aacagggtact gatgctgtca gtgtttaaca ctatgtttag ctgtgtttat 1800
gctataaaa tgcaatatta gacactagct agtaactgct cctcatgtaa ctccaaagaa 1860
aacaggattt cattaagtgc attgaatgtg gmtatttctc taagttaact atattgtcct 1920
ttgcttgaat gcaatgccgt gcagatttat gwggctgcta tttttatttt ctgtgcatta 1980
ctttaacacc ttaaaggag aagcaaacat ttccttcttc agctgactgg caatggccct 2040
ttaactgcaa taggaagaaa aaaaaaag tttgtgtgaa aattgggtgat aactggcact 2100
taagatcgaa aagaaatttc tgtatacttg atgccttaag atgcccagag ctgcccagag 2160
ctctgaaaga ctttaagata ggcagtaatg cttactacaa tactactgag tttttgtaga 2220
gttaacattt gataataaaa cttgcctgtt taatctcaaa a
2261

```

<210> 325

<211> 1213

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1213)

<223> n equals a,t,g, or c

<400> 325

```

tggacgcgtg ggtcgaccca cgcgtccggt caaaaytaac cccctaataa aattaattaa 60
ccactcattc atcgacctcc ccaccccatc caacatctcc gcatgatgaa acttoggctc 120
actccttggc gcctgcctga tcttccaaat caccacagga ctattcctag ccatgcaacta 180
ctcaccagac gcctcaaccg ccttttcatc aatcgccacc atcactcgag acgtaaaatta 240
tggetgaatc atccgctacc ttcacgcaa tggcgccctca atattcttta tctgcctctt 300
cctacacatc gggcgaggcc tatattacgg atcatttctc tactcagaaa cctgaaacat 360
cggcattatc ctctgcttg caactatagc aacagccttc ataggctatg tcttcccgtg 420
aggccaaata tcattctgag gggccacagt aattacaaac ttactatccg ccatcccata 480
cattgggaca gacctagttc aatgaatctg aggaggctac tcagtagaca gtcccaccct 540
cacacgattc tttacotttc acttcattct gccottcatt attgcagccc tagcagcact 600
ccacctccta ttcttgacg aaacgggatc aaacaacccc ctaggaatca cctcccatc 660
cgataaaaac acctccacc cttactacac aatcaaagac gccctcggt tacttctctt 720
ccttctctcc ttaatgacat taacactatt ctcaccagac ctctaggcg acccagacaa 780
ttatacccta gccaacccct taaacacccc tcccacatc aagcccgat gatatttct 840
attgccttac acaattctcc gatccgtccc taacaaacta ggaggcgctc ttgccctatt 900

```